

Claims:

1. A process for preparing enantiomer-enriched α -hydroxycarboxylic acids or enantiomer-enriched α -hydroxycarboxylic amides starting from a cyanide
5 donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase or a nitrile hydratase.
2. A process for preparing enantiomer-enriched α -hydroxycarboxylic acids starting from a cyanide donor,
10 an aldehyde or ketone in the presence of an oxynitrilase and a nitrilase.
3. A process for preparing enantiomer-enriched α -hydroxycarboxylic amides starting from a cyanide donor, an aldehyde or ketone in the presence of an oxynitrilase and a nitrile hydratase.
- 15 4. Process according to one or more of Claims 1 to 3, characterised in that
the oxynitrilase of an organism or of the constituents of a plant selected from the group consisting of
Sorghum bicolor, Hevea brasiliensis, Mannihot
20 esculenta and almond kernels is employed.
5. Process according to one or more of Claims 1 and/or 2, characterised in that
the nitrilase of an organism selected from the group consisting of Rhodococcus strains or of Alcaligenes
25 faecalis is employed.
6. Process according to one or more of Claims 1 and/or 3, characterised in that
the nitrile hydratase of an organism selected from the group consisting of Rhodococcus spec., Rhodococcus
30 rhodochrous and Rhodococcus erythropolis is employed.
7. Process according to one or more of the preceding claims,

characterised in that
the reaction is implemented in an aqueous medium at a
pH value of 6.0-9.0.

8. Process according to one or more of the preceding
5 claims,
characterised in that
the reaction is implemented within a temperature
interval of 20-40 °C.
9. An enzymatic reaction system exhibiting an
10 oxynitrilase, a nitrilase or a nitrile hydratase,
water, a cyanide donor and an aldehyde or a ketone.
10. A whole-cell catalyst exhibiting a cloned gene for an
oxynitrilase and a nitrilase or a nitrile hydratase.
11. Whole-cell catalyst according to Claim 9,
15 characterised in that
in the case where a nitrile hydratase is present said
whole-cell catalyst likewise exhibits a cloned gene
for an amidase.